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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,109	07/21/2003	David E. McMechan	2001-IP-003050 U1 USA	6120

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EXAMINER

HOUSE, LETORIA G

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 04/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/624,109

Applicant(s)

MCMECHAN ET AL.

Examiner

Letoria House

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>07212003</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Priority*

1. It is noted that this application appears to claim subject matter disclosed in prior Application No. 60/399,254, filed 07/29/2002. A reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e) or 120. See 37 CFR 1.78(a). For benefit claims under 35 U.S.C. 120, the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications. Also, the current status of all nonprovisional parent applications referenced should be included.

If the application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference to the prior application must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C.

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119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Although the terms of a claim may appear to be definite, inconsistency with the specification disclosure may make an otherwise definite claim take on an unreasonable degree of uncertainty. In re Cohn, 438 F.2d 989, 169 USPQ 95(CCPA 1971); In re Hammack, 427 F.2d 1378, 166 USPQ 204 (CCPA 1970). In

Cohn, the claim was directed to a process of treating a surface with a corroding solution until the metallic appearance is supplanted by an "opaque" appearance. Noting that no claim may be read apart from and independent of the supporting disclosure on which it is based, the court found that the description, definitions and examples set forth in the specification relating to the appearance of the surface after treatment were inherently inconsistent and rendered the claim indefinite.

Claim 10 is inconsistent with the terminology recited in the specification. On page 7 the applicant recites the apparatus comprising a downhole mixer without further describing the apparatus, or referencing the apparatus in the submitted drawings. Subsequently, on page 30 the applicant recites the apparatus comprising a mixing area, and refers to the Figure 12 item 276. The applicant's summary does not correspond with the disclosure, and confuses the reader as to the scope of the applicants claim. For examining purposes the Examiner has interpreted claim 10 as claiming a downhole mixing area.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 1,8-12,18-27,29, 31-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Wetzel et al. (U.S. 6,817,410). Wetzel et al. discloses an apparatus for treating a production interval of a wellbore (column 8, line 3), the apparatus comprising:

- a packer assembly (item 46 of figure 2; column 3, lines 49-59);
- a sand control screen connected relative to the packer assembly (item 28 of figure 2; column 3, lines 49-59);
- a cross-over assembly providing a lateral communication path downhole of the packer assembly for delivery of a treatment fluid (column 3, lines 4-6) and a lateral communication path uphole of the packer assembly for a return fluid (item 26 of figure 2; column 3, lines 49-59);
- a wash pipe assembly in communication with the lateral communication path uphole of the packer assembly and extending into an interior of the sand control screen (item 70 of figure 4);
- and at least one sensor operably associated with the wash pipe assembly, the sensor operable to collect data relative to at least one property of the treatment fluid during a treatment process such that a characteristic of the treatment fluid is regulatable during the treatment process based upon the data (column 4, lines 13-34; item 62 of figure 4).
- the apparatus wherein at least one property monitored by the sensor is selected from the group consisting of viscosity, temperature, pressure, velocity, specific gravity, conductivity, and fluid composition (column 4, lines 1-34);

- the apparatus wherein the characteristic of the treatment fluid that is regulated is selected from the group consisting of fluid viscosity, proppant concentration, and flow rate (column 4, line 17);
- the apparatus further comprising a downhole mixer (figure 2); Although Wetzel et al. teaches the use of a cross over assembly, Wetzel et al. is silent on the use of a downhole mixing area or downhole mixer. However, this feature is deemed to be inherent to the Wetzel et al. system. Figure 2 shows that the treatment fluid enters the annulus area and flows up through the wash pipe at the cross over point in the same manner depicted in figure 12 of the application. The fluid treatment function would be inoperative if downhole mixing was not accomplished;
- the apparatus wherein the treatment process is selected from the group consisting of gravel packing, frac packing, acid treatments, conformance treatments, resin consolidations and chemical treatments (column 3 lines 46-49).

Claims 12 and 18-21 recite the apparatus limitations of claims 1 and 8-11, and are distinct only in that the applicant is claiming the monitoring components of the apparatus as recited in claims 1 and 8-11. Therefore claims 12 and 18-21 are rejected for the same reasons enumerated above in the rejection of claims 1 and 8-11.

Method claims 22-27, 29, and 31-35 recite the operational steps related to the apparatus limitations of claims 1 and 8-11, and are therefore rejected for the same reasons enumerated above in the rejection of claims 1 and 8-11.

Method claims 36-49 recite the operational steps related to the limitations of claims 12 and 18-21, and are therefore rejected for the same reasons enumerated above in the rejection of claims 12 and 18-21.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12-21, and 36-49 are rejected under 35 U.S.C. 102(b) as being anticipated by Quigley et al (U.S. 6,004,639). Quigley teaches:

- An apparatus for monitoring treatment fluid in a production interval of a wellbore during a treatment process, the apparatus comprising: at least one sensor operably positioned within the production interval of the wellbore; wherein the sensor is operable to collect data relative to at least one property of the treatment fluid during the treatment process; and wherein at least one characteristic of the treatment fluid is regulatable during the treatment process based upon the data (figure 1, column 9-12);
- The apparatus as recited wherein the at least one sensor is in communication with an energy conductor that is integral with a tubular having a composite structure, the at least one sensor being operably associated with the tubular (figure 1, column 10 lines 52-55);
- The apparatus further recited wherein the tubular forms at least a portion of the washpipe (figure 1, column 12 lines 27-31);



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- The apparatus further recited wherein the tubular forms at least a portion of the base pipe (figure 1, column 12 lines 27-31);
- The apparatus as recited wherein the sensor is embedded within an inner surface of the tubular (column 10 lines 63-65);
- The apparatus as recited wherein the sensor is embedded within an exterior surface of the tubular (column 10 lines 63-65);
- The apparatus as recited further comprising a series of sensors operably positioned at predetermined intervals within the production interval of a wellbore that collect data relative to the at least one property of the treatment fluid as a function of position (column 4 lines 13-15);
- The apparatus as recited wherein the at least one property monitored by the sensor is selected from the group consisting of viscosity, temperature, pressure, velocity, specific gravity, conductivity and fluid composition (column 9 lines 17-48);
- The apparatus as recited wherein the characteristics of the treatment fluid that is regulated is selected from the group consisting of fluid viscosity, proppant concentration and flowrate (column 9 lines 17-48);
- The apparatus as recited wherein the treatment process is selected from the group consisting of gravel packing, frac packing, acid treatments, conformance treatments, resin consolidations and chemical treatments (column 12 lines 27-31).

Method claims 36-49 recite the operational steps related to the limitations of claims 12-21, and are therefore rejected for the same reasons enumerated above in the rejection of claims 12-21.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-11 and 22-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (U.S. 6,004,639) in further view of Fisher et al. (U.S. 6,554,065).

As stated above, Quigley et al. teaches an apparatus for measuring various fluid properties along a composite wash pipe. However Quigley et al. does not teach the use of the wash pipe within a gravel packing assembly comprised of a packer assembly, a

sand control screen, and a cross-over assembly. Fisher et al. teaches an apparatus for treating a production interval of a wellbore, the apparatus comprising:

- A packer assembly (figure 1);
- A sand control screen connected relative to the packer assembly (figure 1);
- A cross-over assembly providing a lateral communication path downhole of the packer assembly for delivery of a treatment fluid and a communication path uphole of the packer assembly for a return fluid (figure 1);
- A wash pipe assembly in lateral communication with the communication path uphole of the packer assembly and extending into an interior of the sand control screen; and at least one sensor operably associated with the wash pipe assembly, the sensor operable to collect data relative to at least one property of the treatment fluid during a treatment process such that a characteristic of the treatment fluid is regulatable during the treatment process based upon the data (figure 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the gravel packing assembly of Fisher et al. with the composite wash pipe of Quigley et al. to obtain fluid treatment data during a gravel packing operation because the system of Quigley et al. is more efficient and effective as it provides added protection of the sensing elements, and as a result extends the life of the equipment.

Method claims 22-35 recite the operational steps related to the apparatus limitations of claims 1-11, and are therefore rejected for the same reasons enumerated above in the rejection of claims 1-11.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 28 and 30 are rejected under 35 U.S.C. 103(a) as being anticipated by Wetzel et al. (U.S. 6,817,410). Wetzel et al. discloses an apparatus for treating a production interval of a wellbore (column 8, line 3) as describe above. With regard to claims 28 and 30, Wetzel et al. does not teach the measurement of treatment fluid velocity or conductivity. However based on the extensive yet non exclusive recitation of measurable properties recited in lines 9-34 of column 4 of the Wetzel et al. patent, and the ability to applying the continuity equation of fluid mechanics to convert flow rate to fluid velocity, where the flow rate = (area) x (velocity). Additionally, conductivity is the heat transferred to or from the treatment fluid at various points along the wash pipe, it is obvious and well known to one skilled in the art of measuring fluid properties that given temperature readings at various points along the wash pipe, the change in temperature along the pipe can be calculated by applying the fundamental equations of heat transfer ( $H = kA \Delta T / L$ ). The examiner hereby takes Official notice that these measuring steps would have been obvious to one skilled in the art at the time of the invention in order to

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determine any measurable property of the treatment fluid as they are elementary and fundamental in the area of fluid property measurement.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Restarick et al. (U.S. 6,684,951) teaches the use of sensors to provide information on the effectiveness of gravel placement during gravel pack completions. Ringgenberg et al. (U.S. 6,729,398) teaches the use of sensors to monitor and regulate fluid properties. Johnson (U.S. 5,829,520) teaches a method and apparatus for testing and monitoring wellbore operations. Bixenman (U.S. 6,343,651) teaches an apparatus and method for controlling fluid flow with sand control.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Letoria House whose telephone number is (703) 605-0210. The examiner can normally be reached on M-F, 7:00 A.M. - 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David Bagnell  
Supervisory Patent Examiner  
Art Unit 3672

LGH